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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/506,084	02/17/2000	Toshikazu Ohshima	2355.11106	7474

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EXAMINER

HARRISON, JESSICA

ART UNIT

PAPER NUMBER

3714

DATE MAILED: 05/29/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary

Application N .

09/506,084

Applicant(s)

OHSHIMA ET AL.

Examiner

Jessica J. Harrison

Art Unit

3714

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 20 March 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4, 8-10, 18-23, 27-29 and 37-39 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 8-10, 18-23, 27-29 and 37-39 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 14.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Continued Prosecution Application

The request filed on 10/29/2002 for a Continued Prosecution Application (CPA) under 37 CFR 1.53(d) based on parent Application No. 09/506084 is acceptable and a CPA has been established. An action on the CPA follows.

Applicant's amendment of March 20, 2003 is acknowledged. Claims 1-4, 8-10, 18-23, 27-29 and 37-39 remain pending. Claims 1, 8, 20, 27 and 39 have been amended. Claims 5-7, 11-17, 24-26 and 30-36 have been cancelled.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4, 8-10, 18-23, 27-29 and 37-39 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Jarvik.

The rejection of the prior office action is maintained and repeated hereinbelow. The Jarvik system integrates virtual reality with real-time sensed physical reality to provide a unique hybrid environment, as claimed in the instant claims. Regarding the newly added limitation of "an inputting unit adapted to input a real space image corresponding to a location/posture of a viewpoint of the operator", note Jarvik at 11:35-55 and camera 148. Applicant's amendments to claims 1, 20 and 39 merely rephrased the functionality of the computational unit and deleted the recognition unit while the amendments to claims 8 and 27 enhanced claim clarity. The claims being broadened are still anticipated by Jarvik as further explained hereinbelow in responding to Applicant's arguments.

Response to Arguments

Applicant's arguments filed March 20, 2003 have been fully considered but they are not persuasive.

Applicant's sole point of contention remains hinged upon applicant's assertion that the prior art reference to Jarvik is virtual reality device and not a mixed reality device, i.e., Jarvik is not directed to a combination of virtual images and real space images. Therefore, applicant concludes Jarvik does not disclose or suggest at least the feature of inputting a real space image corresponding to a location/posture of a viewpoint of a user. In this version of applicants argument, applicant defines his mixed reality apparatus as having

an essential characteristic of images of virtual objects are superimposed on the operator's view of a real space *or an image of the real space* (Remarks, p12, l 15 – 17: emphasis added). Mixed reality results in a view of a real scene which has additional virtual objects superimposed thereon. Applicant contrasts this definition with his version of virtual reality in which the operator views a combination of generated and recorded images, noting that some of the images may originate as real images. Applicant further submits that Jarvik is directed to a virtual reality device, and does not disclose or suggest a viewpoint detection unit, an imputing unit and a presentation unit as claimed. In considering Applicant's argument, it is noted that the instant disclosure purports the imputing unit to be either a see thru Heads Mounted Display (HMD) or a video camera (1003) which records 'real' scenes for superimposing virtual images upon, dependent upon the type of real object and or design considerations. Applicant claims an "inputting unit", which covers both arrangements. It should be noted here that Applicant's own disclosure meets his argued definition of virtual reality with the video camera embodiment, as opposed to meeting his argued definition of mixed reality with the HMD embodiment. Thus, as can readily be seen, Applicant's argument is not commensurate in scope with his claims or disclosure. Furthermore, turning to Jarvik, a thorough reading of the entire reference makes it clear that Jarvik includes the means as claimed, as well as meets Applicant's argued definition of 'mixed reality' device. Jarvik terms his device 'hybrid virtual reality', and as

used in the patent refers to the inclusion of real objects in addition to images representing objects that are not physically present. See Jarvik 3:18-35, at least. Jarvik utilizes a partially transparent HMD (Jarvik 7:35 – 66, last sentence in particular) or camera technology (prerecorded video of second embodiment, video camera 148 – col 11) precisely as applicant discloses. Thus, Jarvik clearly has a viewpoint detection unit, an imputing unit and a presentation unit as claimed. Jarvik's hybrid reality space is as much of a mixed reality space as applicant has disclosed and claimed.

Applicant further argues that Jarvik fails to anticipate as only parts of the user's body are used as real objects, not the entire view of real space. It must be noted that applicant is taking too narrow a view of Jarvik: additional viewing of real objects is also suggested in the first embodiment of the invention where the exercise equipment is viewed through Jarvik's HMD. Notwithstanding, nothing in applicant's claim language can be even remotely viewed as placing any limitations to the size or amount of 'real space' to be viewed. Applicant's argument is not commensurate in scope with applicant's claim language. Furthermore, Jarvik does indeed superimpose virtual images in both his embodiments: the door superimposed over the real handle of col4; the competitor superimposed over the roadway and background scenery of col 13 are but two clear examples given in Jarvik.

Finally, Applicant submits that Jarvik fails to disclose the computation unit adapted to determine the next action of virtual objects by

referring to a rule memory based on a relation among the location/posture of a viewpoint of the operator, location(s) of the virtual object(s) and geometric information of real objects. Applicant should note Jarvik Figure 10 and corresponding discussion. Jarvik's computational unit is equivalent to that claimed.

Conclusion


The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Newly discovered prior art to mixed reality systems have been cited for applicant's review and consideration.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to J. Harrison whose telephone number is (703) 308-2217.



JESSICA HARRISON
PRIMARY EXAMINER